DOCUMENT RESUME

ED 334 986 IR 015 149

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TITLE Learners Self-Reports of Characteristics Related to Academic Achievement and Motivation.
PUB DATE 91
NOTE 15p.; In: Proceedings of Selected Research Presentations at the Annual Convention of the Association for Educational Communications and Technology; see IR 015 132.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Analysis of Variance; *Difficulty Level; High Schools; *Individual Characteristics; Junior High Schools; Multivariate Analysis; *Predictor Variables; *Sex Differences; *Student Motivation; Tables (Data)

ABSTRACT

This study investigated continuing motivation for hard and easy tasks and subjects' judgements of selected learner characteristics purported to be related to learning and motivation. The data were collected through subjects' self-reports on a Student School and Work Survey questionnaire. The subjects were approximately 100 males and 100 females from the seventh, ninth, and eleventh grades. The return to task (motivation) measure on the questionnaire consisted of scenarios in which a male or female character performed a task the character considered to be either hard or easy. Each subject responded to two of the eight scenarios: 2(easy or hard task difficulty) x 2(male or female character) x 2(helping to produce the school newspaper or creative idea tasks). The Learner Characteristics Measure (Part Two) contains 15 questions that assess school-related aspects of each of the five learner characteristics of approval, attribution, challenge, competence, and locus of control. Analyses of the data revealed a significantly higher rate of return to easy tasks over hard tasks and a significantly higher rate of return for females than for males. A higher return rate for easy tasks was reported for the scenario character and a higher return rate for hard tasks was reported for the subject. Females had significantly higher reported return-to-task rates for self-return and return to easy tasks than males. The results were highly consistent across grade levels. A summary of results by sex across the five learner characteristics indicates that females showed a higher desire than males for approval and challenge in school-related tasks. Results for the learner characteristics across grade levels reveal a pattern in which older students take less responsibility for their learning, desire less personal challenge, and feel less school-related competence. (21 references) (BBM)

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Learners Self-reports of Characteristics Related to Academic Achievement and Motivation

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Learners Self-reports of Characteristics Related to
Academic Achievement and Motivation

The relationship between academic achievement and motivation has been well established. Continuing motivation for a task has been defined as the future pursuit of that task under free choice conditions (Maehr, 1976). A student's beliefs about attribution, approval, challenge, self-competence, and locus of control have also been shown to have an impact on academic achievement and motivation.

Continuing motivation or return to task in school settings has been examined across a number of variables, including academic achievement, task difficulty, evaluation mode and gender. It has been theorized that challenge or mastery is a greater factor in boys' motivation to return to task, thus causing them to choose difficult tasks more frequently than girls, and that social approval is a greater factor in girls' motivation for a task, causing them to choose easier tasks more frequently (Harter, 1978; Van Hecke, Tracy, Cotler & Ribordy, 1984). While this adult reasoning seems logical, no self-report evidence has been presented from boys and girls themselves to validate it.

Academic achievement can be a major source of approval and social acceptance for females (Diesterhaft & Gerken, 1983; Gould & Slone, 1982; Prawat, 1976). Girls may be as desirous of challenge as boys, but they may sacrifice challenge for approval when the two conflict (Story & Sullivan, 1986; Van Hecke, et al., 1984; Whitehead, Anderson & Mitchell, 1987).

Other factors besides challenge and approval are often cited as being related to motivation. They include perceived competence, attribution of success and failure, and locus of control for learning activities. These factors have also been examined across a number of variables including gender and academic achievement.

Self-perception of competence is commonly accepted as a predictor of academic achievement. Females often show lower expectations of task success and lower ability estimates than do males (Jagacinski & Nicholls, 1987; McCombs, 1984; Prawat, 1976; Sleeper & Nigro, 1987). McCombs (1984) reports the growing recognition of the importance of students self-perceptions in the choices of learning activities which they pursue. Females attribute failure to lack of ability more often than do males (Miller, 1986; Parsons, Meece, Adler & Kaczala, 1982). Locus of control for responsibility of learning or task outcome is seen as an important correlate to self concept and to attributions for success (McCombs, 1984; Prawat, 1976; Uguroglu & Walberg, 1986).

Each of the individual factors of challenge, approval, competence, attribution and control have been related to one or more of the other factors in previous studies of continuing motivation (Bogie & Buckhalt, 1987; Diesterhaft & Gerken, 1983; Harter, 1981; Rosen & Aneshensel, 1978). However, no one to date has systematically collected descriptive data by sex and grade level on these five factors.

The purpose of this study was to investigate continuing motivation for hard and easy tasks and subjects' judgments of selected learner characteristics purported to be related to learning and motivation. The data were collected through subjects' self-reports on a Student School and Work Survey questionnaire, rather than being inferred from subject's behavior patterns in experimental research. A sample of approximately 100 males and 100 females from the seventh, ninth and eleventh grades was used to provide a relatively stable analysis of patterns by sex and grade level.

Method

Subjects

The subjects for this study were a total of 632 students, 338 females and 294 males, from grades seven, nine, and eleven at a junior and senior high school in a large suburban school district in the southwest. The numbers of subjects by grade level were 106 females and 93 males from the seventh grade, 128 females and 96 males from the ninth grade, and 104 females and 105 males from the eleventh grade. All subjects were

from required classes. The junior high school was a feeder school for the high school. The student population of both schools ranges from lower to upper-middle socioeconomic class.

Procedures

This study was part of a larger survey which was developed for this study. It was administered by doctoral students to intact classes on a single day in each school. Students completing the survey were enrolled in required junior high math classes and required high school history classes. The survey was administered during the first twenty minutes of each class period.

Criterion Instrument

Most experimental studies of return to task (continuing motivation) have used relatively simple non-academic tasks such as anagrams, word search puzzles, and create-a-word problems. Tasks for this study were designed to be somewhat more substantial and applied. One involved helping to produce the school newspaper, with the implication that it involves writing, editing and page layout. The other involved coming up with an invention or creative idea.

The return to task measure consisted of scenarios in which a male or female character performed a task that the character considered to be either hard or easy. Eight scenarios were developed: 2 (easy or hard task difficulty) x 2 (male or female character) x 2 (newspaper or creative idea tasks). The presentations were counter-balanced for sex of character, task difficulty and type of task, and were randomly ordered by subject to prevent possible order bias.

Each subject responded to two scenarios, one with a female character and one with a male character. The number of scenarios per subject was limited to two in order to minimize the possibility that subjects would detect a pattern of change in the scenarios and respond more to the pattern than to the situation portrayed in each scenario per se. Across his or her two tasks each subject read about one boy and one girl, one school newspaper task and one creative task, and one easy and one hard task.

For each scenario, a subject answered one question about whether the scenario character would return to the task when offered another opportunity and a second question about whether the subject (i.e., the respondent) him/herself would return to the task in the same situation. 'Yes' responses were scored one point and 'no' responses were scored zero.

The Learner Characteristics Measure (Part Two) contains 15 questions. School related aspects of each of the five learner characteristics of approval, attribution, challenge, competence, and locus of control were assessed by three individual questions on 4-point Likert scales. Reliability data for each three-item subscale are reported in the results section.

Data Analysis

The return to task data were analyzed by a 2 x 2 x 2 x 3 (task difficulty, target individual, sex of subject and grade level) repeated measures MANOVA. Sex and grade level were between-subjects factors and task difficulty and target individual were within-subjects factors.

For the Learner Characteristics measure means were computed for each individual question and for the five subscales of approval, attribution, challenge, competence and locus of control. ANOVAs were performed for the five subscales and Scheffe post hoc tests were performed as appropriate. Cronbach's coefficient alpha was computed as a reliability measure for each of the subscales and Pearson product moment correlation coefficients were computed for each of the fifteen questions.

Results

Return to Task

Table 1 reports the return-to-task rate by task difficulty, target individual (scenario character or subject), sex of subject and grade level. The variable reflecting the greatest difference was task difficulty, on which the overall return rate was .85 for

easy tasks and .42 for hard ones. Return rate by sex of subject was .66 for females and .61 for males. Return rates for the target individual were identical, .64 for both the scenario character and the respondent. Return rates were also very similar by grade level, .65 for grade 7, .62 for grade 9, and .64 for grade 11.

The 2 x 2 x 2 x 3 MANOVA revealed two significant differences for main-effect variables. The mean return rate of .85 for easy tasks was significantly higher than the mean of .42 for hard tasks, F (1,626) = 492.63, $p < .0001$. The mean rate of .66 for females was significantly higher than the mean of .61 for males, F (1,626) = 6.85, $p = .009$. Mean return rates did not differ significantly for target individual or for grade level.

The MANOVA yielded a significant two-way interaction for task difficulty by target individual, F (1,626) = 106.60, $p < .0001$. This interaction reflects the fact that the projected return to easy tasks was higher for the scenario character (.92) than for the subject (.79), whereas the projected return to hard tasks was higher for the subject (.49) than for the scenario character (.35). The task difficulty by target individual interaction is diagrammed in Figure 1.

The MANOVA also yielded significant two-way interactions for sex of subject by target individual and sex of subject by task difficulty. The sex of subject by target individual interaction, F (1,626) = 4.21, $p = .041$, shows females (.64) and males (.63) projecting very similar return rates for the scenario character, but females (.68) reporting a higher self-return rate than males (.59). The sex of subject by task difficulty interaction, F (1,626) = 6.92, $p = .009$, reflects a higher return rate to easy tasks for females (.91) than for males (.80), but identical rates for females (.42) and males (.42) to hard tasks.

Learner Characteristics

Part Two of the questionnaire dealt with the learner characteristics of approval of others, attribution of success or failure, desire for challenge, perception of self competence and locus of control in a learning situation. Table 2 shows the overall mean total for each characteristic based on scoring of zero to three. Zero was assigned as the score for the least positive response and three for the most positive response. Table 3 summarizes the statistically significant grade by sex ANOVAs for each of the five learner characteristics.

APPROVAL For approval, the overall mean was 2.24 for females and 1.94 for males. The higher score for females indicates more desire for the approval of others, and the lower score for males reflects less desire for approval. The sex-by-grade analysis of variance revealed that the difference between females and males was statistically significant, F (1,620) = 37.827, $p < .001$.

The overall means for approval by grade levels were 2.21 for grade seven, 1.94 for grade nine, and 2.02 for grade eleven, indicating that approval became less important across grade level. The ANOVA for grade level was statistically significant, F (2,620) = 5.715, $p < .01$. A Scheffe post hoc test revealed a significant difference between the seventh and eleventh grades F (2,629) = 5.659, $p < .01$, but not between any other grades. The interaction for sex by grade level was not statistically significant for approval nor for any of the other learner characteristics discussed hereafter.

ATTRIBUTION For attribution, the overall mean was 2.00 for females and 2.04 for males, reflecting higher attribution to themselves than to their teachers for success in school. The difference in means between females and males for attribution was not statistically significant.

The overall means for attribution across grade levels were 2.17 for grade seven, 2.03 for grade nine, and 1.87 for grade eleven, showing a trend toward less personal attribution as grade level increased. The difference by grade was statistically significant, F (2,619) = 23.720, $p < .001$. Scheffe post hoc results revealed that each grade was significantly different from the others.

CHALLENGE For challenge, the overall mean was 1.67 for females and 1.53 for males, indicating a significantly higher desire for challenge by females than by males, F (1,620) = 8.367, $p < .01$.

The overall means for challenge by grade level were 1.72 for grade 7, 1.60 for grade 9, and 1.48 for grade 11, showing less desire for challenge as grade level increased. The ANOVA revealed a significant difference by grade level, F (2,619) = 8.241, $p < .001$. The Scheffe test revealed that seventh grade was significantly different than the eleventh grade at the .001 level and the other differences were not significant.

COMPETENCE For competence, the overall mean was 1.99 for females and 2.01 for males, a non significant difference by sex indicating relatively high levels of self-competence for school tasks. The overall means by grade level for competence were 2.12 for grade 7, 2.10 for grade 9, and 1.79 for grade 11 showing lower feelings of self-competence as grade level increased.

The difference by grade level was statistically significant, F (2,619) = 28.988, $p < .001$, with the Scheffe test revealing that the eleventh grade was significantly lower than the seventh and ninth grades at the .001 level.

LOCUS OF CONTROL For locus of control, the overall mean was 1.94 for females and 1.98 for males, revealing a relatively high level of personal locus of control for both sexes. The overall means by grade level for locus of control were 1.97 for grade 7, 1.93 for grade 9, and 1.98 for grade 11. Neither the sex or grade level differences were statistically significant.

The reliability analyses for the five learner characteristics revealed alpha coefficients of .58 for approval, .29 for attribution, .47 for challenge, .61 for competence and .51 for locus of control. These coefficients are indicative of fairly high internal consistency for the three-item scales for all of the characteristics except attribution. The less acceptable value of .29 for attribution was a function of the negative wording of attribution item 2, "When you have trouble understanding something that the teacher is explaining, whose fault is it?". Clearly this item should be revised to be more consistent in wording with the other two attribution items prior to any further use of the scale.

Figure 2, shows the response patterns in graphic form for each of the five learner characteristics by grade level and sex. It can be seen that the characteristics show rather tight patterns of consistency of score levels, especially by sex and to a somewhat lesser degree by grade level.

Discussion

One purpose of this study was to investigate the return-to-task rates on hard and easy tasks projected by the subjects for scenario characters and reported for themselves personally. The data revealed a significantly higher rate of return to easy tasks over hard tasks and a significantly higher rate of return for females than for males. Three significant two-way interactions occurred. A higher return rate for easy tasks was reported for the scenario character and a higher return rate for hard tasks was reported for the subject. Females had significantly higher reported return-to-task rates for self-return and return to easy tasks than males.

The return rate for easy tasks (.85) was double the rate for difficult tasks (.42). These data are consistent with the common research finding that subjects prefer easy tasks over hard ones. However, the differences between the return rates for easy and hard tasks in this study were much greater than those reported in most other studies (e.g., Hughes, Sullivan, & Beaird ,1986 and Story & Sullivan, 1986).

The higher overall return-to-task rate for females than for males (.66 to .61) is a function of females' higher return rates for easy tasks, as reflected in the sex of subject by task difficulty interaction. The female return rate was significantly higher than the male rate (.90 to .80) on easy tasks but the same on hard tasks (.40 for both sexes). Thus, the higher overall rate for females was accounted for entirely by the difference

on easy tasks. Most of this difference on easy tasks occurred on self-return (.87 for females and .70 for males), thereby yielding the sex of subject by target individual interaction in which females had a significantly higher self-return rate than males (.68 to .59) but projected nearly the same character return rate as males (.64 to .63).

This higher female return rate for easy tasks is consistent with prior research, but the similar return rates for males and females for difficult tasks are not. Higher return rates for females to difficult tasks have often been attributed to a greater desire for social approval by females and the probability that they will perform better on easier tasks (Harter, 1978; Story & Sullivan, 1986; Van Hecke, et al., 1984). Males have generally been found to be more willing to return to difficult tasks than females. The common interpretation of this finding is that males desire challenge more than females do.

Most of the research which shows a higher return rate for males has involved forced-choice situations in which subjects must choose between a hard and easy task. The present research raises the possibility that females may select the easy task more often because they have a greater preference for easy tasks than males do. But when given a choice of either doing a hard task or not doing it (rather than choosing between a hard or an easy task), females chose hard tasks for the scenario character and for themselves at about the same rate as males. Thus, the evidence from the present research does not indicate a greater preference for challenge by males than by females under the conditions of this study.

Two factors may help to explain the greater difference in return rates between difficult and easy tasks in this study than in others. One is that the tasks in this study were explicitly identified as being difficult or easy in the eyes of the scenario character. In contrast, in most studies of difficulty level, task difficulty is treated as an implicit variable that students must infer if they attend to it at all. Subjects may not always have personalized the scenario characters' perception of the difficulty of the task. Further, students in most studies report return to task only for themselves and not for another individual too. For example, some subjects may have reasoned, "Well, he thought that coming up with a creative idea was hard, but it wouldn't be hard for me." In addition, some subjects may have been attracted to a task itself, which could cause them to return to it irrespective of the character's judgment of its difficulty. A second factor is that the difference for subjects themselves (.79 for hard tasks and .49 for easy ones) was much less than the difference for scenario characters (.92 for hard and .35 for easy), though still higher than the reported rates from most continuing motivation research.

The results were highly consistent across grade levels. Subjects in all three grades showed the same high preferences for easy tasks and relatively low preferences for hard tasks, as well as the differential patterns by both target individual and sex. These data suggest that return to task preferences related to task difficulty and sex remain quite stable across the grade levels (7 to 11) and mean ages (12 years 9 months through 16 years 9 months) represented in this study.

On the Learner Characteristics measure, the high mean overall scores by sex of 2.24 for females and 1.94 for males for approval of others about school performance reveal a desire for approval. Approval of others was important for all subjects, but significantly more so for females at all grade levels. These results complement those of other researchers (Diesterhaft & Gerken, 1983; Prawat, 1976), who have found that academic achievement is a major source of approval and social acceptance for females.

The desire for approval decreased from the seventh grade to the ninth and eleventh grades. A similar pattern was detected by Harter (1975) with elementary school children and by Prawat (1976) with junior high school children. Apparently, a more internal orientation reflecting less desire for the approval of others emerges as children grow older and become more self-sufficient.

The overall results for attribution in school settings show high personal attributions for success for both sexes across grade levels, a result which agrees with other researchers (Parsons et al., 1982; Whitehead et al., 1987; Whitley & Frieze, 1985). The attribution results also revealed significantly weaker personal attributions as grade level increased. This finding differs from the meta-analysis results of Whitley & Frieze (1985), who found no significant grade level correlations, and contrasts with data obtained by Prawat (1976), who found that personal attributions increased significantly from sixth grade to seventh grade and again from seventh grade to eighth grade.

Prawat (1976) and Whitley and Frieze (1985) used different types of tasks from the school-related tasks in the present study. Prawat's (1976) tasks were a battery of affective tests not specifically related to school tasks. Academic tasks made up only 12% of the studies reported by Whitley and Frieze (1985). A possible reason for the different results in the present study is that children may have different attribution patterns in school than in other situations. In fact, Whitley and Frieze (1985) recommended research on naturalistic tasks in educational settings as an extension of their results.

The results for challenge revealed a significantly greater preference by females for challenge in the school-related tasks used in the survey. Current literature generally reports that males prefer more challenge than females. Most of the studies which have shown males desiring more challenge than females have used word search puzzles, create-a-word tasks, and anagrams, all of which could be considered by students as more like games than learning tasks (Bogie & Buckhalt, 1987; Harter, 1978; Miller, 1986). The school-related nature of the challenge questions in the present study may have appealed more to females than to males and resulted in their higher preference for challenge.

The desire for challenge decreased significantly as the grade level increased for both females and males. No explanations for this decrease can be found in current literature. Perhaps this decrease in desire for challenge reflects a greater occupation with nonschool matters. Children may become more bored with school tasks or more oriented toward social activities and work opportunities as they become more independent.

Both females and males showed high levels of self-competence for school-related tasks. The comparable levels across sex are contrary to some research findings which show lower ability estimates for females than males (Jagacinski & Nicholls, 1987, McCombs, 1984; Sleeper & Nigro, 1987), but consistent with others (Bogie & Buckhalt, 1987; Prawat, 1976).

Very few studies have addressed grade level and self-competence. In one such study, Prawat (1976) found no significant differences for grade as a source of variance for a self-esteem measure. In the present study, competence tends to decrease as grade level increases.

The results for locus of control show high internal ratings that remained near the same level across grade levels for both females and males, a result which is consistent with several studies reported by Stipek and Weisz (1984). The present study measured the subjects' desired locus of control for school activities, either self-determined or teacher-determined. Most researchers have assessed locus of control and its relationship to self-competence and achievement using more general measures. They have typically found a positive correlation between internal locus of control and high self-competence (Diesterhaft & Gerken, 1983; Prawat, 1976; see also Stipek & Weisz, 1981 for a review).

A summary of the results by sex across the five learner characteristics indicates that females showed a higher desire than males for approval and challenge in school-related tasks. The result for approval is consistent with other research findings, but the result for challenge contrasts with most research data. The most plausible

explanation for the higher female preference for challenge appears to be the emphasis on school-type tasks in the present survey as contrasted with the more puzzle-like tasks in other studies.

The results for learner characteristics across grade levels reveal a pattern in which older students take less responsibility for their learning, desire less personal challenge, and feel less school-related competence. The opposite trend for school-related approval, which becomes more internal as grade level increases, fits this pattern as well. Other researchers have reported similar findings for achievement measures (Prawat, 1976) and for an intrinsic/extrinsic classroom orientation measure (Harter, 1981). Prawat (1976) suggests the increasing importance of peer groups as a possible explanation of his results. Contrarily the approval of friends received a very low rating in the present study. As students grow older, they become more independent and often look more to the world outside school. It may be that school, and academic activities, do not have as much importance in students' lives as they did when the students were younger (Harter, 1981).

Two overall patterns for females appeared across both parts of the survey. Approval of others is important for females as evidenced by their desire to return to easy tasks and their high approval scores on the learner characteristics scale, However, females also showed a stronger desire for difficult tasks and challenge in school activities than found by other researchers (Harter, 1978; Miller, 1986).

Boys and girls had identical self-reported return rates to tasks that the scenario characters thought were difficult -- tasks that therefore could be considered as potentially challenging. Conscious efforts by educators to provide greater social approval to girls for selecting challenging tasks could possibly increase their frequency of selection of such tasks. Research which investigates the effects of providing greater social approval for selecting and participating in challenging tasks could lead to better understanding of the patterns of continuing motivation of boys and girls for various types of school tasks.

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Table 1

Return to Task Rate by Task Difficulty, Target Individual, Sex of Subject, and Grade Level

	Grade							
	7		9		11		Total	
Difficulty Level	F	M	F	M	F	M	F	M
Character Return								
Easy	.93	.91	.91	.90	.98	.88	.94	.90
Hard	.35	.37	.35	.30	.34	.38	.35	.35
Total	.64	.64	.63	.60	.66	.63	.64	.63
Self Return								
Easy	.85	.74	.87	.71	.88	.66	.87	.70
Hard	.54	.49	.47	.45	.46	.52	.49	.49
Total	.70	.61	.67	.58	.67	.59	.68	.59

Overall Mean Return Rates

Hard = .42	Male = .61	Character = .64	Grade 7 = .65
Easy = .85	Female = .66	Self = .64	Grade 9 = .62
			Grade 11 = .64

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Figure 1. Return to Task Rates for Task Difficulty by Type of Character

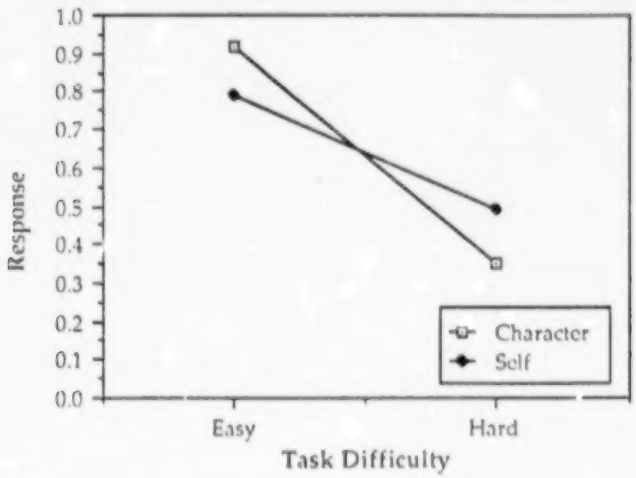

Table 2 Overall Means for Each Learner Characteristic

	Grade							
	7		9		11		Total	
Characteristic	Female	Male	Female	Male	Female	Male	Female	Male
Approval	2.39	2.03	2.20	1.89	2.13	1.90	2.24	1.94
Attribution	2.15	2.19	2.02	2.04	1.84	1.90	2.00	2.04
Challenge	1.80	1.64	1.68	1.51	1.51	1.45	1.67	1.53
Competence	2.17	2.07	2.07	2.12	1.73	1.85	1.99	2.01
Locus Control	1.95	1.99	1.93	1.93	1.94	2.02	1.94	1.98

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Table #3 Summary of Significant Differences for Learner Characteristics

Characteristic	Significance	Variable	Difference
Approval	.001	Female	Females rated approval more important
	.01	Grade	7th graders rated approval more important
Attribution	.001	Grade	7th graders rated internal attribution more highly
Challenge	.01	Female	Females rated challenge higher
	.001	Grade	7th graders rated challenge higher
Competence	.001	Grade	7th graders rated competence higher than 11th graders
Locus of Control			There were no significant differences

Figure 2. Learner Characteristcs by Grade and Sex.